CentER

Discussion Paper

No. 2003–63

THE VALUE RELEVANCE OF DIRTY SURPLUS ACCOUNTING FLOWS IN THE NETHERLANDS

By Y. Wang, W.F.J. Buijink, R.C.W. Eken

July 2003

ISSN 0924-7815

Tilburg University

The Value Relevance of Dirty Surplus Accounting Flows in the Netherlands

Yue Wang*
Willem Buijink
Rob Eken

Department of Accounting and Accountancy
Tilburg University

This draft
April 2003

This paper benefited from discussions at the 2002 EAA Annual Congress in Copenhagen. The authors also wish to thank seminar participants at Tilburg University, especially Jeroen Suijs and Laurence van Lent, for their helpful comments.

Correspondence address: PO Box 90153, 5000 LE Tilburg, The Netherlands.
* Corresponding author: wang@uvt.nl

The value relevance of dirty surplus accounting flows in the Netherlands

Abstract

Recently the Dutch financial reporting standard setters have taken steps to make dirty surplus accounting flows more visible to parties outside firms, either by eliminating their possibility or by requiring comprehensive income type statements. These steps are presumably based on the idea that dirty surplus accounting flows are value relevant to investors and hence have to be visible to them. Whether dirty surplus accounting flows are indeed value relevant is an empirical issue. This paper therefore explores both incremental and relative value relevance of various dirty surplus accounting flows for Dutch listed firms.

We find evidence that dirty surplus goodwill write-offs in particular are relevant in explaining returns and that the clean surplus earnings perform better than the reported earnings over 1-year intervals. Taken together, these 1-year interval empirical results indeed imply that the Dutch managers in the period considered wrote-off value relevant information via dirty surplus accounting flows. Over longer-term intervals, dirty surplus items are not or negatively related to returns and reported income becomes more value relevant than clean surplus income.

Keywords: Dirty surplus accounting flows; Value relevance; The Netherlands.

1. Introduction

Value relevance of accounting information, most notably earnings, is an important topic because of the widespread use of accounting measures for contracting and valuation purposes (Watts and Zimmerman 1986, and Beaver 1998). Recently, standard setting bodies for financial reporting have come under attack for allowing potentially value relevant dirty surplus items to be kept out of earnings. In this paper, we will empirically test their relevance for security returns.

Two views exist about 'dirty surplus accounting flows'. Excluding irrelevant dirty surplus flows from earnings could improve earnings quality and could be a method of communicating insider information. By taking these potentially noisy earnings components (i.e. irrelevant dirty surplus accounting flows) directly to shareholder's equity, firm managers can claim they are showing the market that those flows are not useful for earnings-based firm valuation. On the other hand, value relevant dirty surplus flows could be evidence of earnings management. Managers could hide value relevant information by excluding these flows from earnings.

In fact, in more and more countries standard setters, apparently accepting the second view, are eliminating dirty surplus accounting options to reduce managers' discretion on reported bottom-line earnings and hence to improve earnings quality. For example, in the UK, the Accounting Standards Board (ASB) effectively abolished extraordinary items in 1992 (FRS 3) and eliminated the dirty surplus treatment of goodwill write-offs in 1998 (FRS 10). In the Netherlands, the Council for Annual Reporting abolished dirty surplus treatment of goodwill in 2000 (RJ 500.218), and in February 2001 the Dutch government has proposed legislature to Parliament to the same effect (*Kamerstukken Eerste en Tweede Kamer*, publication number 28220).

Recent theoretical accounting research by Feltham and Ohlson (1995), and Ohlson (1995) may provide another reason for the attention directed towards clean

surplus accounting. In their residual income-based valuation framework, accounting numbers are directly linked to firm value. But this happens under the condition of clean surplus accounting. The clean surplus relation is one of the fundamental assumptions to express firm value in terms of observable accounting variables (Bernard 1995, Walker 1997, Dechow et al. 1999, and Courteau et al. 2001).

But how relevant are dirty surplus items for firm value? And also, given the cost of new regulation and the cost of enforcement, do they deserve the recent special attention of standard setting bodies? In this paper, we empirically examine the value relevance of dirty surplus accounting flows.

This study looks at Dutch listed firms in the period of 1988 to 1997. During that period a large number of dirty surplus accounting flows were allowed in the Netherlands. This makes the Netherlands an interesting setting to investigate the relevance of dirty surplus items.

In addition, in the Netherlands investors are thought to be less influential in company's decision-making process due to the Dutch policy of self-regulation in private sector for financial reporting (DeJong et al. 2002). Also investors have little direct influence on the composition of the supervisory board in its co-optation system[1] because new board members are 'self-elected' by the remaining members in that board. The freedom in choosing financial reporting methods that Dutch managers enjoy, and the characteristics of the governance structure, therefore could provide room for managers' opportunistic reporting behavior.

It is interesting to find out whether Dutch managers indeed take advantage of this freedom by excluding value relevant dirty surplus items from earnings or if they use accounting flexibility to improve reporting quality by doing this.

[1] Firms are run by a management board and this management board is appointed by the self-elected supervisory board.

In order to test the value relevance of various dirty surplus flows empirically, we use the standard approach of examining the statistical association between dirty surplus flows and stock returns. We employ an incremental value relevance method similar to that used by O'Hanlon and Pope (1999). In addition, we also conduct a relative value relevance study to compare the explanatory power (i.e. with respect to returns) of clean surplus earnings and reported earnings (under the Dutch GAAP).

We find that in the Netherlands, dirty surplus flows; in particular, currency translation differences and goodwill write-offs are value relevant over a 1-year interval. Clean surplus earnings are more value relevant than reported earnings over a 1-year interval. However, over longer windows (i.e. 2, 5, and 10-year windows) reported earnings are the preferred explanatory variable for returns and dirty surplus items are not or negatively related to returns. Hence, over one year intervals Dutch managers do appear to exclude value relevant items from income in the period considered.

The remainder of the paper is organized as follows. In the next section, we discuss dirty surplus accounting and provide some empirical evidence on the value relevance of dirty surplus flows. The third section discusses dirty surplus accounting practices in the Netherlands. The fourth section describes the hypothesis development and the research design. The data analysis and the empirical results are presented in the fifth section. In the final section, we conclude the paper and provide suggestions for future research.

2. Literature review

2.1. Dirty surplus accounting

Dirty surplus flows arise if certain changes in shareholders' equity bypass reported earnings. Financial statements are stated on a clean surplus basis if ending-

period book value (BV_t) equals the sum of opening-period book value (BV_{t-1}), clean surplus earnings ($NICL_t$) excluding dividends (DIV_t), and the net capital inflow ($NetCap_t$): $BV_t = BV_{t-1} + NICL_t + NetCap_t - DIV_t$.

Perceived problems with dirty surplus accounting practices stem from a concern that they might lead to a lack of transparency and to managers' opportunistic behaviors since those flows may be more subject to manipulation (Brief and Peasnell 1996, and O'Hanlon and Pope 1999). Therefore, investors may not be able to identify value relevant items.

However, financial market is efficient on average and investors are expected to be able to undo management's manipulation and see 'through' earnings. The efficient market therefore provides us with an opportunity to detect opportunistic reporting behavior. Dirty surplus accounting flows, or earnings, are thought to be manipulated if these flows are incrementally (in addition to reported earnings) relevant. The reported earnings, which are higher than the pro forma clean surplus earnings, could be used for other contracting purposes (see Biddle and Choi 2002, for empirical evidence on the relevance of dirty surplus flows for compensation purposes).

Given the importance of earnings for firm valuation, it is therefore relevant to empirically investigate the valuation effects of dirty surplus flows on earnings. Unless dirty surplus flows can convey consistent information to the market, they would be considered as 'noise' in investors' decision-making process. The inclusion of transitory dirty surplus items to earnings would then lead to a reduction of earnings quality (Watts and Zimmerman 1986, Beaver 1998, and Scott 2003). That is to say, even if those flows are incrementally (in addition to reported earnings) relevant, the

clean surplus earnings may not be more relevant than reported earnings to explain returns.

2.2. Evidence on the magnitude and the value relevance of dirty surplus accounting flows

There are some descriptive statistics on the importance of dirty surplus accounting flows. Median market value deflated dirty surplus flows are -0.004 in the UK (O'Hanlon and Pope 1999) and 0.000 in the US (Dhaliwal et al. 1999) in the period they studied. The empirical data in Lo and Lys (2000) shows a considerable deviation of clean surplus accounting for US firms[2]. In particular, if 'income' is defined as GAAP net income, 14.41 percent of observations have deviations of more than 10 percent of comprehensive (i.e. clean surplus) income. This stresses the potential importance of the dirty surplus components of reported accounting information. Similar information can be found in Hand and Landsman (1998), and Courteau et al. (2001), both also with US data.

Despite this, the evidence on the value relevance of dirty surplus flows in the US suggests that 'comprehensive income' (CI) (i.e. clean surplus income) (FASB 1997) does not perform better than net income when associating both with stock returns (Dhaliwal et al. 1999, and Biddle and Choi 2002). In the UK, O'Hanlon and Pope (1999) also find hardly any evidence that dirty surplus flows explain stock returns. Together, these studies indicate that dirty surplus flows may not be value relevant.

3. Dirty surplus accounting practices in the Netherlands

3.1. Accounting regulatory procedures

During the period covered in this paper (1988-1997), the following situation existed with regards to financial reporting regulation (Buijink and Eken 1999, and Zeff et al. 1999) in the Netherlands.

The Fourth (1978) and Seventh (1983) EU Directives on Company Law are incorporated in the Netherlands in domestic company law. In the Fourth Directive, the format and content of reporting by companies with limited liability is regulated (in particular, the overriding principle 'true and fair view' is adopted), and in the seventh Directive, regulation about the consolidated financial statements is stipulated.

The Dutch annual reporting is regulated in company law as part of the Dutch Civil Code. Parliament is the primary source of financial reporting regulation, which is initiated by the Minister of Justice (Minister van Justitie) and evaluated by the Social and Economic Council (Sociaal-Economische Raad, or SER), the advisory body of parliament in economic matters, and by the Council of State (Raad van State), the government's senior advisory body on legal matters.

The Enterprise Chamber (Ondernemingskamer) has the legal authority to evaluate the complaints from interested parties if they consider corporate financial statements not to comply with the law.

The Dutch auditing profession and the representatives from companies participate in the council for annual reporting (Raad voor de Jaarverslaggeving, or RJ). As a private sector regulatory body, the RJ issues guidelines that elaborate on the legal stipulations. The Netherlands Institute of Registered Accountants (NIvRA) provides technical support to the RJ. But, note that the guidelines do not have the legal position of law; and the auditors do not need to report non-compliance. The RJ is less influential than for example the FASB in the US (Van Lent 1997).

[2] Data from 1962-1997

3.2. Dirty surplus accounting possibilities in the Netherlands

Dutch accounting law is not explicit in its choice of adopting an all-inclusive concept of income. But, the Guidelines (*Richtlijnen*) of the RJ did require an all-inclusive income statement (RJ 240.202) in the period considered, with some specific exceptions however. The dirty surplus items included the following in the period 1988-1997 (the period that the paper looks at):

a) *Purchased goodwill can be charged directly to equity (Dutch accounting law, Section 2:389.7);*[3]

b) *The creation of a revaluation reserve for the amount of the value increase of an asset, in case of application of current valuation (Dutch accounting law, Section 2:390.1). Decreases in the value of assets valued at current prices should as a rule be booked to reduce the revaluation reserve. Only if there is no more revaluation reserve left, should a decrease in current value be charged as a loss to the income statement (Dutch accounting law, Section 2:390.3);*

c) *Currency translation differences can be booked directly to equity. The Dutch law merely requires that the policies for the translation of amounts in foreign currency are disclosed, and that the policy for the recognition of currency translation differences is disclosed (Dutch accounting law, Section 2:384.5). The RJ requires currency translation differences with respect to activities in foreign entities to be reflected directly in equity (RJ 120.916-922);*

d) *The cumulative effect of changes in accounting policies (RJ 140.113-117) and the correction of fundamental errors (RJ 150.106) are preferably reflected directly in equity;*

e) *Expenses and capital tax in respect of an issue of shares are allowed to be charged to the share premium, although it is preferred to capitalize and amortize these items or to charge them directly to income (RJ 240.213);*

f) The following items of a non-recurring or exceptional nature, if material, may be shown directly as movements in equity (RJ 240.211):

- *'Adjustments' to the provision for deferred tax liabilities due to changes in the tax rate, but only to the extent that the deferred liability relates to revaluation of assets;*
- *Effects of a financial reorganization whereby creditors and shareholders relinquish all or part of their rights in connection with the write-off of a loss;*
- *Losses due to the destruction of capital (for example as the result of a natural disaster) for which it is not possible or not customary to take out insurance cover; adverse effects of nationalizations, one-off capital levies or similar forms of expropriation."*

All in all, quite a few exceptions to all-inclusive income were allowed by the RJ in the Netherlands in the period 1988-1997. There was no requirement to include a comprehensive income statement with the primary financial statements. There was, however, a legal requirement to provide a statement of movements in equity in the notes to the financial statements (Section 2:378.1). For each item in equity, i.e. issued capital and the various separate reserves (Section 2:373.1), this statement should show the opening balance, additions and reductions during the financial year (classified according to their nature) and the closing balance.

In sum, five categories of dirty surplus accounting flows that existed in the period covered in this paper will be considered: goodwill write-offs (GW), asset revaluations (REV), currency translation differences (CUR), extraordinary dirty surplus items (EDSI) which are the effects of the 'events' described under f. above, and sundry items (OTH) including the 'events' described under d. and e. above.

[3] The Council for Annual Reporting abolished dirty surplus treatment of goodwill in 2000 (RJ 500.218), and the Dutch government has proposed to Parliament a bill to the same effect in 2002 (*Kamerstukken Eerste en Tweede Kamer,* publication number 28220).

4. Research question development and research design

4.1. Incremental value relevance of dirty surplus flows

The value relevance of accounting flows is conventionally defined as their statistically significant relation with stock returns. We regress the dirty surplus items on returns after controlling for the effects of net income. The purpose of the tests is to discover the variations in return that can be explained by dirty surplus items (i.e. incremental to net income), ceteris paribus. This test is proposed to examine whether or not value relevant accounting flows are excluded from net income.

Our first research question is:

Are dirty surplus flows incrementally value relevant over net income?

We extend our testing window to up to 10 years. Due to timing differences on the recognition of economic events in stock returns and in the accounting system, the returns-earnings associations are stronger over longer windows (Easton et al. 1992). Warfield and Wild (1992) also show that the long interval approach is capable of reducing the earnings' measurement errors. We take the long interval methodology initiated by Easton et al. (1992), and further developed by Warfield and Wild (1992), and used by O'Hanlon and Pope (1999) in the context of dirty surplus accounting flows to be able to perform a more powerful test.

Investors are assumed to pursue a 'hold and invest' strategy, which means that the dividends are assumed to be reinvested to earn the equity cost of capital in the subsequent period. The cum-dividends stock returns at time t is accumulated over a T-period interval. The return (r^T), therefore, equals

$$r^T = \prod_{t=1}^{t=T}(1+r_t)-1 \qquad \text{(E1)}$$

Our period t return lags the corresponding accounting period by six months to allow for a full assimilation of accounting information.

All accounting flows are accumulated accordingly and are all scaled by the market value of the firm 6-month after the beginning of the interval.

$$NI^T = \frac{\sum_{t=1}^{t=T} NI_t a_t}{MV_0}; \qquad DS^T = \frac{\sum_{t=1}^{t=T} DS_t a_t}{MV_0}; \qquad CUR^T = \frac{\sum_{t=1}^{t=T} CUR_t a_t}{MV_0};$$

$$EDSI^T = \frac{\sum_{t=1}^{t=T} EDSI_t a_t}{MV_0}; \qquad GW^T = \frac{\sum_{t=1}^{t=T} GW_t a_t}{MV_0}; \qquad REV^T = \frac{\sum_{t=1}^{t=T} REV_t a_t}{MV_0};$$

$$OTH^T = \frac{\sum_{t=1}^{t=T} OTH_t a_t}{MV_0}; \qquad NICL^T = \frac{\sum_{t=1}^{t=T} NICL_t a_t}{MV_0} \qquad \text{(E2)}$$

Where NI^T: net income (i.e. income after extraordinary items), DS^T: total dirty surplus flows, CUR^T: foreign currency translation differences, $EDSI^T$: extraordinary dirty surplus items, GW^T: goodwill write-offs, REV^T: asset revaluations, OTH^T: sundries, and $NICL^T$: clean surplus net income (i.e. the sum of the dirty surplus flows and the net income).

Accounting flows were accumulated after multiplying the accounting flows of period t in the T-period interval by a_t, which is *'the ratio of a full retention opening (time t-1) book value of shareholders' funds computed by assuming reinvestment of dividends (net of equity issues) arising earlier in the T-period interval, and the actual opening (time t-1) book value of shareholders' funds'*[4] *(O'Hanlon and Pope 1999)*:

$$a_t = \frac{BV_0 + \sum_{\tau=1}^{\tau=t-1} NICL_\tau a_\tau}{BV_0 + \sum_{\tau=1}^{\tau=t-1} (NICL_\tau - DIV_\tau + NetCap_\tau)} = \frac{BV_0 + \sum_{\tau=1}^{\tau=t-1} NICL_\tau a_\tau}{BV_{t-1}} \qquad \text{(E3)}$$

[4] Note that we substitute t for their subscribe s to denote periods.

In equation E3, BV_0 is the opening book value of shareholders' funds at the start of the T-period interval and BV_{t-1} is the book value at the start of period t. We use accumulation intervals of up to 10 years. We report results based on accumulation intervals of 1, 2, 5, and 10 years.

The first model (M1) is a cross-sectional univariate regression of stock return on net income. It is the benchmark model for this study.

$$r_{it}^{T} = \alpha_1 + \beta_1 NI_{it}^{T} + e_{1it}, \qquad \text{(M1)}$$

Where T is the interval length, i and t refer to company i and period t respectively.

The second model (M2) tests the incremental value-relevance of aggregated dirty surplus flows.

$$r_{it}^{T} = \alpha_2 + \beta_2 NI_{it}^{T} + \beta_3 DS_{it}^{T} + e_{2it} \qquad \text{(M2)}$$

The third model (M3) examines the incremental value-relevance of five disaggregated components of dirty surplus flows.

$$r_{it}^{T} = \alpha_3 + \beta_4 NI_{it}^{T} + \beta_5 CUR_{it}^{T} + \beta_6 EDSI_{it}^{T} + \beta_7 GW_{it}^{T} + \beta_8 REV_{it}^{T} + \beta_9 OTH_{it}^{T} + e_{3it} \text{ (M3)}$$

We compare model 1, the benchmark model, with model 2 and model 3. If the dirty surplus flows are incrementally relevant in the presence of net income, the coefficients on either the total dirty surplus flows (β_3) or the dirty surplus flow components ($\beta_5, \beta_6, \beta_7, \beta_8, \beta_9$) should be significantly different from zero, which is evaluated with a t-statistic in M2 or the F-statistic in M3 for the joint significance of dirty surplus flows components.

4.2. Relative value relevance of clean surplus net income

We also examine the usefulness of including dirty surplus items to earnings and compare the superiority of two earnings measures: clean surplus earnings and

reported earnings. Dirty surplus flows would be relevant to improve earnings quality, if clean surplus net income has higher coefficients than that of reported earnings since higher coefficients imply a more persistent earnings measure. The methodology is motivated by the studies of Dhaliwal et al. (1999). This test could assist the users of earnings information to choose from alternative earnings' measures.

Our second research question is:

Is clean surplus net income more highly associated with returns than net income?

The fourth model (M4) will compare relative value relevance of clean surplus earnings.

$$r_{it}^{T} = \alpha_4 + \beta_{10} NICL_{it}^{T} + e_{4it} \qquad \text{(M4)}$$

Where $NICL_{it}^{T}$ is defined as net income plus dirty surplus flows of a T-period interval of company i at period t. We again here use the long interval approach explained earlier. This model will empirically investigate the effects of including dirty surplus flows on the quality of earnings. M4 will be compared with M1 and the J-test for non-nested models is used as the criterion for model selection (i.e. which earnings measure is more relevant in explaining returns).

5. Data selection and empirical results

5.1. Data selection and descriptive statistics

We gather market data from Datastream for the whole population of Dutch listed firms during 1988-1997 and we hand-collect accounting information from firms' financial statements for the same period. The sample is reduced to 118 firms after excluding financial firms and firms listed also in other exchanges. The final sample is further refined with the following criteria:

i. Annual price, dividends, and market value information are available on the 2001 Datastream research files;

ii. The required accounting information is available in annual financial reports and the fiscal-year ends in December;

iii. Complete information concerning the companies is available across the whole research period (1988-1997).

This selection procedure yields 85 Dutch firms. We list their names in appendix 1. For each of them, we have 10 observations (i.e. 850 firm-year observations). Employing these selection criteria may lead to survivor bias. However, it enables us to control for the effects of extreme values associated with financially distressed firms.

Table 1 shows the sample distribution by industries.

Insert table 1 here

Table 2 presents descriptive statistics of the variables. The variables are winsorized at 0.005 at each tail over 1-year interval, at 0.025 at each tail over 2-year, 5-year, and 10-year intervals in order to deal with the influential observations problem.

On average, extraordinary dirty surplus flows (EDSI) and sundries (OTH) are not significantly different from zero over the 1-year interval. Table 2 reveals that (scaled) goodwill write-offs are by far the most important dirty surplus item over all intervals. For instance over the 1-year interval goodwill write-offs make up almost all of dirty surplus flows on average. Other dirty surplus flows are relatively unimportant over all intervals. Note also that clean surplus net income is about 50% (mean) of the reported income over all intervals. It suggests that the dirty surplus flows reduce net income substantially.

Insert table 2 here

Table 3 provides the correlation matrix over 1-year interval. There is a significant positive correlation between dirty surplus flows and returns. The correlations among dirty surplus flows are always lower than 10%, and those dirty surplus flows are not highly associated with reported net income (less than 10%) either. However, the two scaled income measures: reported net income and the pro forma clean surplus income, are highly correlated (86.2%).

Insert table 3 here

Overall, the descriptive statistics suggest that the magnitude of scaled dirty surplus accounting flows is larger in the Netherlands than in the UK: the median is –0.006 in the Netherlands, and -0.004 in the UK[5] (see O'Hanlon and Pope 1999).

5.2.Regression results

In table 4, we present the results for the estimated models over various intervals. Panel A-D show the estimation results for model 1-4 respectively. For example, panel A shows regression statistics for the returns - (reported) income model (M1) of up to 10 years, and panel B presents the results for the returns - (reported) income-total dirty surplus flows model (M2) of up to 10 years, and so on.

Insert table 4 here

The coefficients on reported net income (Panel A) are always positively and significantly different from zero at 1% significance level. The results thus provide consistent evidence that Dutch reported earnings are value-relevant. For 1-year interval, the coefficient of total dirty surplus flows (Panel B) is significant at 1% level. Furthermore, in panel C it can be seen that for the 1-year interval currency translation differences and goodwill write-offs are significant in explaining returns and the F-test

(6.87) of the joint significance on those components strongly rejects the null hypothesis that none of them are value relevant in the presence of net income. Also, both the coefficient and the R-square are higher in the return-clean surplus income regression (0.522 and 0.036 respectively) than in the return-net income regression (0.463 and 0.020 respectively) (Panel A and Panel D). The J-test of non-nested models prefers the clean surplus earnings as the explanatory variable to return because the test statistics reject the null hypothesis that model 1 is preferred over model 4, and the test statistics cannot reject the null hypothesis that model 4 performs better. Hence, dirty surplus accounting flows are value relevant and useful in improving contemporary earnings quality. Overall, these findings imply that Dutch managers did indeed exclude value relevant accounting flows from bottom line earnings for 1-year intervals in the period considered.

Over longer intervals, the coefficients of total dirty surplus flows are insignificantly different from zero. However, currency translation differences are negatively associated with return over 5 and 10-year intervals, and goodwill write-offs are significantly different from zero over 2 and 10 year intervals. It thus appears that investors over-react to these two items in the short run and the market corrects for this over-reaction in the long run. Over longer accumulation intervals, the J-test always prefers the reported income as the explanatory variable for return, either marginally at 10% level over a 2-year window or at 1% level over 5, and 10-year intervals. It implies that the reported earnings contain more permanent elements than the clean surplus earnings, and the reported earnings are the preferred measure of economic income in the long run.

[5] The descriptive statistics are reported in the UK for the period 1973-1992.

Consistent with previous studies, overall, we observe an increase of returns-earnings association as the accumulation intervals are lengthened: the R-squares increase from 2% to 11% in model 1, from 4% to 17% in model 2, from 6% to 26% in model 3, and from 4% to 5% in model 4. Except that there is a slight decrease over the 10-year window in model 1 and in model 4. The decrease may be the result of potential outliers as the number of observations decreases substantially in that period. As expected, after we winsorize the observations at 5% of each tail, we observe an increase of R-square for these two models over the 10-year window. In sum, our findings are comparable with previous findings that accumulating accounting information could increase its explanatory power and reduce its measurement errors.

6. Conclusion and suggestions for future research

This paper tests the relevance of dirty surplus flows to equity investors with both an incremental and a relative association study. We find dirty surplus items; in particular currency translation differences and goodwill write-offs are value relevant over 1-year windows. We also find that clean surplus income is more relevant than reported income for 1-year windows. Over longer period intervals dirty surplus items are no longer consistently value relevant. Over 10-year intervals accumulated currency translation differences and goodwill write-offs affect returns negatively. Over longer periods, consistent with the previous findings, reported income is more relevant than clean surplus income in the period considered in the Netherlands. There is also an increase of the value relevance of accounting information as we extend the accumulation intervals.

Therefore, there is evidence that Dutch managers write off value relevant information to increase reported earnings over 1-year intervals. Given the significant

association of important dirty surplus flows to returns, it appears advisable to include the dirty surplus flows in the income statement for full disclosure, as was subsequently done (see session 1).

Note that the empirical tests of the value relevance of dirty surplus flows used in this paper have an equity valuation perspective. It has to be interpreted with caution when drawing standard setting inferences. Other empirical studies could investigate the influence of accounting information on contracting costs for instance.

Also, it should be noted that by providing more reliable information the political and auditors' liability costs (Kothari et al. 1998) could be reduced even if the information is not relevant to security valuation.

References

Accounting Standards Board., 1992, 'Financial reporting standard 3: reporting financial performance'.

Accounting Standards Board., 1997, 'Financial reporting standard 10: goodwill and intangible assets'.

Beaver, W.H., 1998, 'Financial reporting: an accounting revolution', Prentice Hall.

Bernard, V.L., 1995, 'The Feltham-Ohlson framework: implications for empiricists', Contemporary Accounting Research, 11, 734-747.

Biddle, G.C., and Choi, J.H., 2002, 'Is comprehensive income irrelevant', Hong Kong University of Science and Technology, Working Paper.

Black, F., 1993, 'Choosing accounting rules', Accounting Horizons, December, 1-17.

Brief, R.P., and Peasnell, K.V., 1996, 'Clean surplus, a link between accounting and finance', Garland Publishing.

Buijink, W.J., and Eken, R.C.W., 1999, 'The Netherlands', in: S. McLeay (ed.), 'Accounting regulation in Europe', Macmillan, 237-269.

Courteau, L., Kao, J.L., and Richardson, G.D., 2001, 'Equity valuation employing the ideal versus ad hoc terminal value expressions', Contemporary Accounting Research, 18, 625-661.

Dechow, P.M., Hutton, A.P., and Sloan, R.G., 1999, 'An empirical assessment of the residual income valuation model', Journal of Accounting and Economics, 26, 1-34.

DeJong, A., DeJong, D.V., Mertens, G., and Wasley, C., 2002, 'The role of self-regulation in corporate governance: evidence from the Netherlands', Working Paper, Erasmus University Rotterdam.

Dhaliwal, D., Subramanyam, K., and Trezevant, R., 1999, 'Is comprehensive income superior to net income as a measure of firm performance?', Journal of Accounting and Economics, 26, 43-67.

Easton, P.D., Harris, J.A., and Ohlson, J.A., 1992, 'Aggregate accounting earnings can explain most of the security returns', Journal of Accounting and Economics, 15, 119-142.

Feltham, G.A., and Ohlson, J.A., 1995, 'Valuation and clean surplus accounting of operating and financial activities', Contemporary Accounting Research, 11, 689-731.

Financial Accounting Standards Board., 1997, 'Statement of financial accounting standards No. 130: reporting comprehensive income'.

Hand, J.R.M., and Landsman, W.R., 1998, 'Testing the Ohlson model: v or not v, that is the question', Working Paper.

Kothari, S.P., Lys, T., Smith, C.W., and Watts, R.L., 1989, 'Auditor liability and information disclosure', Journal of Accounting, Auditing and Finance, 4, 307-339.

Lent van, L.A.G.M., 1997, 'Pressure and politics in financial accounting regulation: the case of financial conglomerates in the Netherlands', Abacus, 33, 88-114.

Lo, K., and Lys, T., 2000, 'The Ohlson model: contribution to valuation theory, limitations, and empirical applications', Journal of Accounting, Auditing & Finance, 337-370.

O'Hanlon, J.F., and Pope, P.F., 1999, 'The value-relevance of UK dirty surplus accounting flows', British Accounting Review, 32, 459-482.

Ohlson, J.A., 1995, 'Earnings, book value and dividends in security valuation', Contemporary Accounting Research', 11, 661-687.

Raad voor de Jaarverslaggeving., 2002, 'Richtlijnen voor de jaarverslaggeving', Jaareditie 2002, Kluwer.

Scott, W.R., 2003, 'Financial accounting theory', 3rd edition, Prentice Hall.
Walker, M., 1997, 'Clean surplus accounting models and market-based accounting research: a review', Accounting and Business Research, 27, 341-355.
Warfield, T., and Wild, J., 1992, 'Accounting recognition and the relevance of earnings as an explanatory variable for returns', The Accounting Review, October, 821-842.
Watts, R.L., and Zimmerman, J.L., 1986, 'Positive accounting theory', Prentice-Hall International.
Zeff, S.A., Buijink, W., and Camfferman, K., 1999, ''True and fair' in the Netherlands: inzicht or getrouw beeld?', The European accounting review, 8, 523-548.

Appendix 1

The firms in the final sample

Number	Name of the firms
1	Aalberts Industries
2	ACF Holding N.V. (97: Brocacef)
3	Ahold
4	Ahrend Groep
5	AIR (Automobiel Industrie Rotterdam)
6	Akzo
7	Alanheri
8	Amsterdam Rubber Cultuur Maatschappij (RCMA)
9	ASD Amst. Options Traders (AOT)
10	Arag Holding
11	BAM Holding
12	Batenburg Beheer
13	Beer's Zonen
14	Blydestein – Willink
15	Boer, de, Winkelbedrijf (97: De Boer Unigro)
16	Boer, de, Drukkerij (Boekhoven) (93: Roto Smeets de Boer)
17	Boskalis Westminster
18	Burgman Heybroek
19	Cate, ten, Nijverdal
20	Cindu-Key & Kramer (CKK) / Cindu Int.
21	CVG (Crown v. Gelder c)
22	Dico International
23	Dorp Groep
24	Drie Electronics
25	Econosto
26	Elsevier
27	Eriks Holding
28	Frans Maas Beheer
29	Gamma Holding
30	Gelderse Papier Groep
31	Getronics
32	Geveke Electr. Int. / Geveke
33	Gouda Vuurvast
34	Grolsch Bierbr.
35	Groothandelsgebouwen
36	GTI-Holding
37	Hagemeyer
38	HBG (Hollandse Beton Groep)
39	Heineken
40	Hoek Loos ('s Machine & Zuurstoffabriek)
41	Hoogovens
42	Hunter Douglas
43	Internatio Muller
44	Klene's
45	Koppelpoort Holding
46	Krasnapolsky

47	Kuhne + Heitz
48	Landre & Gilderman
49	Macintosh Confectie
50	Management Share
51	Melle, van
52	Mulder Boskoop
53	Naeff
54	NAGRON (Nat. Grondbezit)
55	NBM Bouw / NBM Amstelland
56	NEDAP
57	Nedlloyd
58	Nedschroef Holding
59	Neways Electroniscs
60	NKF Holding
61	Norit
62	Nutricia Gem. Bezit / Ver. Bedr.
63	Oce van der Grinten
64	Ordina Beheer
65	OTRA
66	Pakhoed
67	Philips
68	Polynorm
69	Porceleyne Fles
70	Reesink
71	Rood Testhouse
72	Stork
73	Schuitema
74	Schuttersveld
75	Simac Techniek
76	Telegraaf de, Holding
77	Textielgroep Twenthe
78	Tulip Computers
79	Twent. Kabel Holding
80	Ubbink
81	VNU verz. Bez.
82	Vredestein
83	Wolters Kluwer
84	Wegener Arcade (Wegener Tijl)
85	Weweler

Table 1

Sample distribution by industrial sector[6]

Industrial Sector	Number of Companies
Brewers	2
Chemicals, commodity	4
Other construction	4
Distrib. ind. Comps	9
Diversified industry	5
Electronic equipment	12
Engineering, general	8
Food + drug retailers	4
Food processors	3
Paper	2
Household	11
Information technology	1
Leisure	1
Media	6
Personal products	1
Real estate development	2
Retailers, multi dept.	1
Computer services	4
Asset management	1
Steel	1
Transportation	3
Med equip + supplies	1
Total	85

[6] It is based on the FTSE industrial classification.

Table 2
Descriptive data for variables used to estimate models concerning the association of net income and dirty surplus flows with returns

T	N	Mean	Std.dev.	25%	50%	75%
T=1 year	850					
RETU		0.222	0.412	-0.049	0.150	0.416
NI		0.059	0.125	0.047	0.076	0.102
DS		-0.027	0.071	-0.039	-0.006	0
CUR		-0.001	0.010	0	0	0
EDSI		0	0	0	0	0
GW		-0.027	0.056	-0.031	-0.001	0
REV		0.001	0.025	0	0	0
OTH		0	0.009	0	0	0
NICL		0.031	0.150	0.016	0.055	0.093
T=2 year	425					
RETU		0.467	0.649	-0.010	0.309	0.790
NI		0.139	0.158	0.112	0.167	0.220
DS		-0.061	0.097	-0.096	-0.032	0
CUR		-0.003	0.015	-0.001	0	0
EDSI		0	0	0	0	0
GW		-0.059	0.086	-0.085	-0.022	0
REV		0.001	0.025	0	0	0
OTH		-0.001	0.009	0	0	0
NICL		0.077	0.213	0.023	0.120	0.193
T=5 year	170					
RETU		1.707	2.146	0.351	0.987	2.163
NI		0.446	0.392	0.271	0.465	0.662
DS		-0.167	0.213	-0.288	-0.120	-0.013
CUR		-0.004	0.023	-0.002	0	0
EDSI		0	0	0	0	0
GW		-0.170	0.196	-0.271	-0.101	00
REV		0.007	0.059	0	0	0.004
OTH		-0.003	0.021	0	0	0
NICL		0.292	0.444	0.070	0.294	0.531
T=10 year	85					
RETU		5.119	4.891	1.801	4.059	7.254
NI		1.210	1.009	0.562	1.192	1.740
DS		-0.428	0.475	-0.721	-0.319	-0.083
CUR		-0.004	0.033	-0.006	0	0.002
EDSI		-0.001	0.007	0	0	0
GW		-0.432	0.471	-0.759	-0.278	-0.053
REV		0.022	0.107	-0.003	0	0.013
OTH		-0.002	0.039	-0.007	0	0.004
NICL		0.798	0.997	0.160	0.602	1.333

The sample consists of all 1988-1997 listed non-financial Dutch firms that have required financial data from Datastream and accounting data in their financial reports. The firms also have complete information available across the period 1988-1997 and their fiscal years end in December. Observations are winsorized at 0.005 at each tail over 1-year interval, at 0.025 at each tail over 2-year, 5-year, and 10-year intervals. Variable definition: T: accumulation interval of T years. N: the number of firm-year observations. Int.: intercepts of the respective model. NI: reported net income. DS: total dirty surplus flows. CUR: currency translation differences. EDSI: extraordinary dirty surplus items. GW: goodwill write-offs. REV: asset revaluations. OTH: sundries. NICL: clean surplus net income. All accounting flows are scaled by the market value of the firm 6-month after the beginning of the interval and accumulated as described in session 4.1.

Table 3
Correlation matrix for variables used to estimate models of the association of net income and dirty surplus flows with return over 1-year interval

	RETU	NI	DS	CUR	EDSI	GW	REV	OTH	NICL
RETU	1.000								
NI	0.140	1.000							
	(0.000)								
DS	0.157	0.090	1.000						
	(0.000)	(0.008)							
CUR	0.140	0.054	0.160	1.000					
	(0.000)	(0.118)	(0.000)						
EDSI	0.052	-0.118	-0.047	0.052	1.000				
	(0.130)	(0.001)	(0.173)	(0.129)					
GW	0.105	-0.006	0.838	-0.038	-0.046	1.000			
	(0.002)	(0.861)	(0.000)	(0.272)	(0.183)				
REV	0.044	0.070	0.359	-0.012	-0.061	0.033	1.000		
	(0.196)	(0.042)	(0.000)	(0.726)	(0.075)	(0.330)			
OTH	0.057	0.061	0.321	0.011	-0.026	0.081	0.082	1.000	
	(0.099)	(0.077)	(0.000)	(0.752)	(0.455)	(0.018)	(0.017)		
NICL	0.190	0.862	0.559	0.117	-0.102	0.408	0.218	0.207	
	(0.000)	(0.000)	(0.000)	(0.001)	(0.003)	(0.000)	(0.000)	(0.000)	1.000

The sample consists of all 1988-1997 listed non-financial Dutch firms that have required financial data from Datastream and accounting data in their financial reports. The firms also have complete information available across the period 1988-1997 and their fiscal years end in December. Observations are winsorized at 0.005 at each tail over 1-year interval, at 0.025 at each tail over 2-year, 5-year, and 10-year intervals. Variable definition: T: accumulation interval of T years. N: the number of firm-year observations. Int.: intercepts of the respective model. NI: reported net income. DS: total dirty surplus flows. CUR: currency translation differences. EDSI: extraordinary dirty surplus items. GW: goodwill write-offs. REV: asset revaluations. OTH: sundries. NICL: clean surplus net income. The significance level of each correlation coefficient is reported in parentheses below the reported correlation coefficients. All accounting flows are scaled by the market value of the firm 6-month after the beginning of the interval and accumulated as described in session 4.1.

Table 4

Results of the estimation of models that test the incremental (relative) value relevance of dirty surplus flows (clean surplus income) to reported net income in explaining return over various accumulation intervals

Panel A: model 1

T	N	Int.	NI	R-Sq.
1	850	0.195	0.463	0.020
		(0.015)***	(0.093)***	
2	425	0.341	0.909	0.049
		(0.037)***	(0.155)***	
5	170	0.852	1.922	0.124
		(0.280)***	(0.533)***	
10	85	3.134	1.640	0.115
		(0.708)***	(0.412)***	

Panel B: model 2

T	N	Int.	NI	DS	R-Sq.
1	850	0.221	0.419	0.846	0.041
		(0.017)***	(0.088)***	(0.167)***	
2	425	0.367	0.886	0.384	0.053
		(0.045)***	(0.159)***	(0.309)	
5	170	0.746	1.834	-0.868	0.131
		(0.321)**	(0.539)***	(0.983)	
10	85	2.518	1.272	-2.481	0.167
		(0.792)***	(0.458)***	(1.593)	

Panel C: model 3

T	N	Int.	NI	CUR	EDSI	GW	REV	OTH	R-Sq.	F-test
1	850	0.222	0.453	5.517	155.628	0.808	0.555	1.714	0.056	6.87***
		(0.017)***	(0.096)***	(1.431)***	(128.000)	(0.197)***	(0.583)	(1.728)		
2	425	0.499	0.277	0.476	5.620	0.681	0.428	1.430	0.041	0.703
		(0.052)***	(0.088)***	(1.055)	(4.327)	(0.402)*	(0.654)	(0.908)		
5	170	1.570	1.814	-5.863	-4.549	2.586	0.738	0.506	0.066	1.796
		(0.627)***	(0.889)***	(2.819)***	(15.084)	(4.068)	(5.169)	(2.242)		
10	85	1.699	1.460	-34.127	2.998	-3.485	0.688	4.920	0.262	2.330**
		(0.790)**	(0.423)***	(12.350)***	(40.249)	(1.292)***	(3.143)	(9.922)		

Panel D: model 4

T	N	Int.	NICL	R-sq.	Nn. (M1)	Nn. (M4)
1	850	0.205	0.522	0.036	4.037***	-1.367
		(0.014)***	(0.069)***			
2	425	0.418	0.638	0.044	0.868	1.764*
		(0.031)***	(0.126)***			
5	170	1.307	1.367	0.080	0.304	2.900***
		(0.216)***	(0.489)***			
10	85	4.286	1.044	0.050	-1.317	2.877***
		(0.778)***	(0.524)**			

The sample consists of all 1988-1997 listed non-financial Dutch firms that have required financial data from Datastream and accounting data in their financial reports. The firms also have complete information available across the period 1988-1997 and their fiscal years end in December.

Observations are winsorized at 0.005 at each tail over 1-year interval, at 0.025 at each tail over 2-year, 5-year, and 10-year intervals.

Models: M1: $r_{it}^{T} = \alpha_1 + \beta_1 NI_{it}^{T} + e_{1it}$

M2: $r_{it}^{T} = \alpha_2 + \beta_2 NI_{it}^{T} + \beta_3 DS_{it}^{T} + e_{2it}$

M3: $r_{it}^{T} = \alpha_{31} + \beta_4 NI_{it}^{T} + \beta_5 CUR_{it}^{T} + \beta_6 EDSI_{it}^{T} + \beta_7 GW_{it}^{T} + \beta_8 REV_{it}^{T} + \beta_9 OTH_{it}^{T} + e_{3it}$

M4: $r_{it}^{T} = \alpha_4 + \beta_{10} CSNI_{it}^{T} + e_{4it}$

Variable definition: T: accumulation interval of T years. N: the number of firm-year observations. Int.: intercepts of the respective model. NI: reported net income. DS: total dirty surplus flows. CUR: currency translation differences. EDSI: extraordinary dirty surplus items. GW: goodwill write-offs. REV: asset revaluations. OTH: sundries. NICL: clean surplus net income. All accounting flows are scaled by the market value of the firm 6-month after the beginning of the interval and accumulated as described in session 4.1.

The panels labeled M1, M2, M3, and M4 report the estimated coefficients on the respective models. The sub-columns label the variables' names report the estimated coefficients on the relevant variables. R-Sq.: R-squares of the estimated models. F-test: F-statistics of the joint significance of CUR, EDSI, GW, REV, and OTH. Nn. (M1) tests the null hypothesis that M1 is redundant over M4, and Nn. (M4) tests the null hypothesis that M4 is redundant over M1 with the non-nested J-tests.

*** the test statistics are significant at 1 percent level.

** the test statistics are significant at 5 percent level.

* the test statistics are significant at 10 percent level.

Huber-White standard errors are reported in parentheses below the reported coefficients.